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10/585,618

07/11/2006

Jiro Terada

2006_1030A

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09/26/2008

WENDEROTH, LIND & PONACK L.L.P.

2033 K. STREET, NW

SUITE 800

WASHINGTON, DC 20006

EXAMINER

CHAPMAN JR, JOHN E

ART UNIT

PAPER NUMBER

2856

MAIL DATE

DELIVERY MODE

09/26/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/585,618 | Applicant(s) TERADA ET AL. | |
| | Examiner John E. Chapman | Art Unit 2856 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/11/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. The drawings are objected to because block element 39 and 40 in Fig. 3, 41a-d in Fig 4, 41 and 47 in Fig. 6, and 11-18 in Fig. 8 should be labeled using appropriate legends.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the tapping electrodes (claim 11) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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2. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are:

Page 6, line 10, element 23a to 23d do not appear to be "diaphragms" in any sense of the word. Rather the element 23a in Fig. 2 appears to be a beam.

Page 6, line 14, support body 33 does not appear to be held in a "slidable" manner. The support body 33 does not appear to "slide" in any sense of the word.

Page 6, line 18, element 23a in Fig. 2 does not appear to have a "wedge shape." Rather it appears to have a rectangular shape.

Page 7, lines 12-16, the sentence is incomprehensible.

Page 11, line 1, "mouth opening" is unclear.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 4, it is not clear what is meant by "a pair of diaphragms," since disclosed element 23a to 23d do not appear to be "diaphragms" in any sense of the word.

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In claim 1, line 10, it is not clear what is mean by “in a slidable manner,” since support body 33 does not appear to “slide” in any sense of the word.

Claim 3 merely recites a use limitation and does not recite any additional structure. A differential circuit for obtaining a difference in natural oscillation frequency should be recited.

In claim 4, it is not clear what is mean by “in a slidable manner,” since holding part (32a) does not appear to “slide” in any sense of the word.

In claim 7, line 2, it is not clear what is meant by “wedge shape,” since disclosed element 23a does not appear to have a “wedge shape.” In addition, it is not clear what is meant by “like being hooked.”

In claim 8, line 3, it is not clear what is meant by “wedge shape,” since holding part (32a) does not appear to have a “wedge shape.” In addition, upper part electrode (26a, 26b) does not appear to be formed along a center part of the “holding part” (32a). Rather, it extends along a center part of the “diaphragm” (23a).

In claim 12, it is not clear what is meant by “like being held so that static acceleration and dynamic acceleration can be detected.”

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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6. Claims 1-3, 5 and 12, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Howe et al. (4,805,456).

Howe discloses a vibration piezoelectric acceleration sensor comprising a frame, a pair of beams (34, 38), a piezoelectric film (column 9, line 53), a weight (11) adjacent one end of each beam, and a holding part (64, 78) for holding the weight (11). No significance is given to the limitation of “diaphragm” and “slidable” in view of the uncertainty of the terms.

Regarding claim 2, Howe discloses a second pair of beams (32, 36) for detecting acceleration in a second direction.

Regarding claim 3, Howe discloses differential frequency detection (column 5, lines 9-12).

Regarding claim 5, Howe teaches forming the beams, weight and holding parts (64, 78) from silicon.

Regarding claim 12, wafer (19) may be taken to be a “main body.”

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 6 and 9, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Howe.

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Regarding claim 6, PZT is a well known piezoelectric material and would have been an obvious choice for the piezoelectric film taught by Howe.

Regarding claim 9, it is well known to add mass in order to increase sensitivity to acceleration.

9. Claims 10 and 11, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Howe in view of Noritomo et al. (JP 09-211020).

Regarding claim 10, it is well known in the art to provide a pair of driving and detecting electrodes, as taught by exciter (4) and receiver (5) of Noritomo et al.

Regarding claim 11, it is well known to provide tapping electrodes, as taught by electrodes (9, 11) of Noritomo et al.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Norling (5,367,217) discloses a known single beam force sensing element in Fig. 1. Judy (6,223,598) discloses an accelerometer comprising a serpentine spring (112, 114).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John E. Chapman whose telephone number is (571) 272-2191. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John E Chapman/
Primary Examiner
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